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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/047,280	01/14/2002	Yung Yip	10305US01	4504

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Attention: Eric D. Levinson
Imation Corp.
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P.O. Box 64898
St. Paul, MN 55164-0898

EXAMINER

NGUYEN, TANH Q

ART UNIT	PAPER NUMBER
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2182

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/047,280

Applicant(s)

YIP ET AL.

Examiner

Tanh Q. Nguyen

Art Unit

2182

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 January 2007 (RCE).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-8,10-16,26,27,30,31,33 and 34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-8,10-16,26,27,30,31,33 and 34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

The previous office action mailed February 22, 2007 is hereby vacated because the examiner did not include Kaneda (US 6,490,648) on the Notice of References Cited and because the examiner inadvertently submitted an incorrect version of the office action. The new office action is as follows:

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 14, 2006 has been entered.

Claim Objections

2. Claim 11 is objected to because of the following informalities: "disk driver controller" in line 2 should be replaced with "disk drive controller".

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

Art Unit: 2182

art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

5. Claims 26, 34 are subject to an undue breadth rejection under 35 USC 112, first paragraph because the tape drive emulator comprises only one element (i.e. an electrical socket) - see MPEP 2164.08(a).

6. Claims 1-2, 4-8, 10-16, 26-27, 30-31, 33-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-2, 4-8, 10-16, 26-27, 30-31, 33-34 recite "a tape drive emulator", yet there is no element for carrying out tape drive emulation, and are therefore misdescriptive and indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2, 27 recite "the electrical connections of the data cartridge". There is insufficient antecedent basis for the limitation in the respective claims.

7. The rejections that follow are based on the examiner's best interpretation of the claims.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 2182

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1, 4, 10-15, 26, 33 are rejected under 35 U.S.C. 102(e) as being anticipated by Albrecht et al. (US 2002/0159182).

10. As per claims 1, 4, Albrecht teaches a system (100, FIG. 20) comprising:

a data cartridge (40, FIG. 20) carrying a non-tape storage medium (60, FIG. 4; [0055]), wherein the data cartridge includes read/write circuitry to access the non-tape storage medium ([0055], lines 3-8) and an external electrical connector (48, FIG. 5; [0049]) coupled to the read/write circuitry ([0055]); and

a tape drive emulator (100, FIG. 20) having an electrical socket (130, FIG. 11) to receive the electrical connector of the data cartridge ([0075], lines 2-5).

11. As per claims 10-12, Albrecht teaches the non-tape storage medium comprising a disk-shaped storage medium ([0012], lines 4-8), the data cartridge including a self contained disk drive housing the disk-shaped storage medium and a disk drive controller ([0055]), the disk drive controller to control access to the non-tape storage medium, wherein the disk drive controller communicates with the tape drive emulator according to SCSI or IDE interface.

12. As per claim 13, Albrecht teaches the tape drive emulator providing power to the data cartridge via the electrical connector of the data cartridge (FIG. 23; [0096]).

13. As per claims 14-15, Albrecht teaches the data cartridge and the tape drive emulator being compatible with existing automation systems (FIG. 10; [0067]-[0068]),

the data cartridge comprising a housing conforming to industry standard dimensions for a magnetic tape drive cartridge ([0047], lines 1-4; [0051]), the tape drive emulator having a form factor of an industry standard tape drive.

14. As per claim 26, Albrecht teaches a tape drive emulator (100, FIG. 20) comprising an electrical socket (130, FIG. 11) to receive an electrical connector of a data cartridge carrying a non-tape storage medium ([0075], lines 2-5; 60, FIG. 4; [0055]).

15. As per claim 33, Albrecht teaches the non-tape storage medium comprising a disk-shaped storage medium ([0055], lines 3-8) and the tape drive emulator comprising a disk drive interface ([0050]; [0075], lines 1-5).

16. Claims 1, 5-6, 26, 30 are rejected under 35 U.S.C. 102(e) as being anticipated by Deckers (US 6,650,961).

17. As per claims 1, 5, Deckers teaches a system (100, FIG. 1) comprising a data cartridge (110, FIG. 1) carrying a non-tape storage medium (113, FIG. 1), wherein the data cartridge includes read/write circuitry to access the non-tape storage medium (115, FIG. 1) and an external electrical connector (121, FIG. 1) coupled to the read/write circuitry (FIG. 1); and a tape drive emulator (130, FIG. 1) having an electrical socket (122, FIG. 1) to receive the electrical connector of the data cartridge (FIG. 1, FIG. 2), wherein the tape drive emulator comprises a host interface (bus between 130 and 140, FIG. 1) to electrically couple the tape drive emulator to a host computing device (140, FIG. 1).

18. As per claim 6, Deckers teaches the protocol between the tape drive emulator

Art Unit: 2182

and the data cartridge being SCSI, Fiber Channel, and IDE (col. 7, lines 10-15; col. 8, lines 21-27). Since Deckers teaches the host being coupled to the tape drive emulator for communications with the data cartridge without any specificity (FIG. 1), one of ordinary skill in the art would consider the host interface using the same protocol as the protocol between the tape drive emulator and the data cartridge - hence the host interface conforming to a SCSI, Fiber Channel or IDE.

19. As per claims 26-30, see the rejections of claims 1, 5 above.

20. Claims 1, 4-6, 26, 30 are rejected under 35 U.S.C. 102(e) as being anticipated by Albrecht et al. (US 6,826,004).

21. As per claims 1, 4, Albrecht teaches a system (100, FIG. 20) comprising a data cartridge (40, FIG. 20) carrying a non-tape storage medium (60, FIG. 4), wherein the data cartridge includes read/write circuitry to access the non-tape storage medium (col. 5, lines 34-35) and an external electrical connector (48, FIG. 5) coupled to the read/write circuitry; and a tape drive emulator (100, FIG. 20) having an electrical socket (130, FIG. 11) to receive the electrical connector of the data cartridge (col. 11, lines 50-55).

22. As per claims 5-6, Albrecht teaches the tape drive emulator comprising a host interface [374, FIG. 27] to electrically couple the tape drive emulator to a host computing device [404, FIG. 27], and the host interface conforming to a Fiber Channel interface (col. 13, lines 33-43).

23. As per claims 26, 30, see the rejections of claims 1, 5 above.

Art Unit: 2182

24. Claims 1, 4-8, 26, 30-31 are rejected under 35 U.S.C. 103(2) as being anticipated by Georgis et al. (US 6,389,503).

25. As per claims 1, 4, Georgis teaches a system (20, FIG. 1) comprising a data cartridge (22, FIG. 1) carrying a non-tape storage medium (24, FIG. 1), wherein the data cartridge includes read/write circuitry to access the non-tape storage medium (22C, 22H - FIG. 2) and an external electrical connector (44, FIG. 1) coupled to the read/write circuitry; and a tape drive emulator (30, FIG. 20) having an electrical socket (SCSI port 106, FIG. 2) to receive the electrical connector of the data cartridge (col. 5, lines 61-63).

26. As per claims 5-8, Georgis teaches the tape drive emulator comprising a host interface [104, FIG. 2] to electrically couple the tape drive emulator to a host computing device [40, FIG. 1], the host interface conforming to a SCSI interface or Fiber Channel interface (col. 5, lines 63-67), the tape drive emulator comprising a translation unit [100, 102 - FIG. 2] to translate commands between the host interface and the electrical socket (col. 2, lines 26-39), the translation unit receiving data stream commands from the host interface and translates the data stream commands into disk drive format commands (col. 2, lines 26-39).

27. As per claims 26, 30-31, see the rejections of claims 1, 5, 7 above.

Claim Rejections - 35 USC § 103

28. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 2182

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

29. Claims 2, 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Albrecht et al. (US 2002/0159182).

Albrecht teaches having the socket having a set of connectors that engage the electrical connections of the data cartridge ([0052]), but does not teach the socket comprising a zero insertion force (ZIF) socket.

Since Albrecht teaches the data cartridge and the tape emulator being used in an automated data storage library (FIG. 10), one of ordinary skill in the art would expect the data cartridges to be inserted/removed in/from the tape drive emulator very often. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a ZIF socket as the socket of the tape drive emulator because a ZIF socket is known to facilitate easy insertion/removal of the electrical connectors of one device from the connectors of another device, and because ZIF is also known to limit the force exerted on the connectors to prevent damages to the connectors.

30. Claims 16, 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Albrecht et al. (US 2002/0159182) in view of Goodman et al. (US 2002/0169521).

Albrecht discloses the invention except for the tape drive emulator having a form factor of an industry standard tape drive.

Goodman discloses a data storage library featuring multipurpose slots, each configured to receive a media drive (e.g. IBM 3570 tape drive: [0031], [0040]) or other various modules (Abstract, lines 1-6) to allow the data storage library to be easily updated with new equipment ([0004]), the other various modules including storage

Art Unit: 2182

emulators ([0009]), hence teaches the storage emulators having a form factor conforming to the industry standard tape drive.

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the dimensions of Albrecht's tape drive emulator to conform to the industry standard tape drive because such dimensions would allow for easy replacement of existing tape drives with tape drive emulators and therefore updating the data storage library with new equipment without wasting the slots in a data storage library such as Goodman's data storage library.

Further, it would have been obvious to one of ordinary skill in the art at the time the invention was made for the dimensions of Albrecht's tape drive emulator to conform to the industry standard tape drive, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955).

31. Claims 1, 4-8, 26, 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneda et al. (US 6,490,648).

32. As per claims 1, 4, Kaneda teaches a system (FIG. 1) comprising a data cartridge (100 - FIG.12) carrying a non-tape storage medium (10, FIG. 2), wherein the data cartridge includes read/write circuitry to access the non-tape storage medium (FIG. 3) and an external electrical connector (90, FIG. 1) coupled to the read/write circuitry; and a tape drive emulator (200, FIG. 1) coupled to the data cartridge.

Kaneda does not teach the tape drive emulator having an electrical socket to

Art Unit: 2182

receive the electrical connector of the data cartridge. Since it was known in the art to incorporate an electrical socket in one device to receive an electrical connector of another device to facilitate coupling and decoupling of the devices, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate an electrical socket in the tape drive emulator to receive the electrical connector of the data cartridge to facilitate coupling and decoupling of the data cartridge and the tape drive emulator, when there is a need to remove and replace a data cartridge (for example when the data cartridge is faulty, or when an upgraded cartridge is desired).

33. As per claim 5-8, Kaneda teaches the tape drive emulator comprising a host interface [92, 210 - FIG. 1] to electrically couple the tape drive emulator to a host computing device [99, FIG. 1], the host interface conforming to a Fiber Channel interface (col. 3, line 32), the tape drive emulator comprising a translation unit [215, FIG. 1] to translate commands between the host interface and the connection to the data cartridge (col. 6, lines 3-6; col. 6, lines 19-28), the translation unit receiving data stream commands from the host interface and translates the data stream commands into disk drive format commands (col. 6, lines 56-62).

34. As per claims 26, 30-31, see the rejections of claims 1, 5, 7 above.

Double Patenting

35. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory

Art Unit: 2182

obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

36. Claims 1, 2, 4-8, 10-16, 26-27, 30-31, 33-34 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 22-26 of copending Application No. 10/385,786. Although the conflicting claims are not identical, they are not patentably distinct from each other because the pending claims of the current application are either anticipated by claims 22-26 of the copending application, or made obvious by claims 22-26 of the copending application (see 102/103 rejections above).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

37. Claims 1, 2, 4-8, 10-16, 26-27, 30-31, 33-34 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 19-20, 24, 29-31, 34-40 of copending Application No. 10/294,514. Although the conflicting claims are not identical, they are not patentably distinct from each other

because the pending claims of the current application are either anticipated by claims 19-20, 24, 29-31, 34-40 of the copending application, or made obvious by claims 19-20, 24, 29-31, 34-40 of the copending application (see 102/103 rejections above).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

38. Claims 1, 2, 4-8, 10-16, 26-27, 30-31, 33-34 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 6 of copending Application No. 11/219,045. Although the conflicting claims are not identical, they are not patentably distinct from each other because the pending claims of the current application are either anticipated by claim 6 of the copending application, or made obvious by claim 6 of the copending application (see 102/103 rejections above).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

39. Applicant's arguments with respect to the Declaration under 37 CFR 1.131 have been considered and are persuasive, but are moot in view of the new ground(s) of rejection.

Conclusion

40. Any inquiry concerning this communication or earlier communications from the

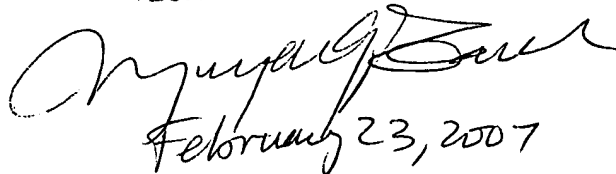
Art Unit: 2182

examiner should be directed to Tanh Q. Nguyen whose telephone number is 571-272-4154. The examiner can normally be reached on M-F 9:30AM-7:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Huynh can be reached on 571-272-4147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TANH Q NGUYEN
PRIMARY EXAMINER
TECHNOLOGY CENTER 2100



February 23, 2007

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